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[New] A method of measuring the luminescence emitted in the measuring medium of a luminescent assay, said method being capable of correcting the variations of luminescence due to the optical properties of the measuring medium, said method comprising:

(a) providing an exciting light source for irradiating a luminescent assay

wherein said assay, upon excitation, emits luminescence at two different wavelengths, λ_1 and λ_2 ;

(b) irradiating said assay with said exciting light source, wherein said light

source is spaced apart from said assay to form a gap therebetween;

(c) splitting the luminescence emitted by the assay at wavelengths λ_1 and λ_2 following excitation, wherein the luminescence at λ_1 is emitted by a reference compound and reflects the optical properties of the measuring medium, and the luminescence at λ_2 is emitted by a tracer compound and is proportional to the amount of analyte;

(d) collecting the luminescence emitted at wavelengths λ_1 and λ_2 ; and

(e) measuring the luminescence emitted at wavelength λ_2 and correcting said emission on the basis of the luminescence emitted at wavelength λ_1 .

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[New] The method of claim 18 further comprising a built-in method of correcting the measurement of the luminescent emission made at wavelength λ_2 , consisting of fixing a counting rate on a channel measuring the luminescent emission of the reference compound at wavelength λ_1 , and then, when this counting rate is reached, triggering the end of the measurement on a channel measuring the luminescent emission at wavelength λ_2 .

20. [(New)] The method of claim 18 wherein the luminescence emitted at λ_2 results from an energy transfer.

21. [(New)] The method of claim 18 wherein the luminescence emitted by the reference compound and by the tracer compound, at wavelengths λ_1 and λ_2 respectively, are measured simultaneously.

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22. [(New)] The method of claim 18 wherein the correction of luminescence is calculated, said calculation comprising dividing the luminescence at λ_2 by the luminescence at λ_1 to obtain the corrected luminescence.

23. [(New)] The method of claim 18 wherein the tracer compound and the reference compound are the same compound.

24. [(New)] The method of claim 18 wherein the tracer compound and the reference compound are different compounds.

25. [(New)] The method of claim 18 wherein the tracer compound and/or the reference compound are fluorescent compounds.

26. [(New)] The method of claim 18 wherein the tracer compound and/or the reference compound are rare earth chelates or cryptates.

27. [(New)] The method of claim 18 wherein the measurement of the luminescent emission at wavelength λ_2 is made by a time-resolved method.

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28. [(New)] The method of claim 18 wherein the emission lifetime of the tracer compound and/or of the reference compound are more than one microsecond.

29. [(New)] The method of claim 18 wherein the corrected luminescence is measured with a picomol/liter measuring sensitivity.

30. [(New)] The method of claim 18 further comprising focusing an exciting beam from said light source to said assay with a lens.

31. [(New)] The method of claim 18 further comprising filters and lenses for directing the exciting light beam on the assay.

32. [(New)] The method of claim 18 further comprising one or more filters for splitting the luminescence emitted by the assay at wavelengths λ_1 and λ_2 following excitation.